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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,150	03/10/2004	Toshihiro Ooishi	50395-259	2537

7590 02/21/2008

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EXAMINER	
HOFFMANN, JOHN M	

ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
02/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,150	OOISHI ET AL.	
	Examiner	Art Unit	
	John Hoffmann	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/30/2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for "the flow velocity" of claims 3-4, and confusing antecedent basis for the various gases throughout claims 2-4. Examiner understands that if there is a gas flowing through a port, that there would be a flow velocity. However the claims are vague as to whether the mentioned gases are flowing through the burner. For example, claim 2, part a) defines the burner as one that comprises a port "for feeding a material gas". Nowhere does it explicitly state that there is a step of "feeding a material gas". For example, a particular tube can be "for" feeding hydrogen – even

when it is not feeding hydrogen, for example, when it is shut off for cleaning. If applicant wishes the claim to require a step of feeding a particular gas to a particular port, then the claim should set forth those steps. For example "feeding a material gas through a first port".

The preamble of claim 1 sets forth that the method "comprises the steps of: (a)...." It is clear that (a) and (b) are steps. However the claim continues with (c) and (d) – which suggests that (c) and (d) are steps, however they don't appear to be steps. Step (a) is "synthesizing" and (b) is "depositing", but it is unclear if C) and (d) are "hitting" steps.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by SUDO "Refractive-Index Profile Control Techniques in the Vapor-Phase Axial Deposition Method" (as supplied by Applicant).

As per figure 7 of the Sudo, there is a peak at 650 C – as seen on the left hand side of the figure, there is a graph. The graph shows the peak, and to either side of the

peak the temperature is less than 650 C. The peak does not correspond to the very tip, rather it corresponds to a section just outside the tip - just like with applicant's drawing, The drawing reasonably shows the exact end/tip/center has a temperature of about 250 C.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Moltzan 3565345.

See the prior Office action.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moltzan 3565345 in view of Tsai et al ("A Study of thermophoretic transport in a reacting flow with application to external chemical vapor deposition processes") or Bocko 4604118) in view of Tsai et al .

See the prior Office action.

Claim 4 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Moltzan 3565345 in view of Tsai et al or Bocko 4604118) in view of Tsai et al as applied to claims 2-3, and further in view of Backer 5180411, Ishihara 2003/0024273 or Evans 5925163.

See the prior Office action.

Response to Arguments

Applicant's arguments filed 1/30/2008 have been fully considered but they are not persuasive.

It is argued that Tsai does not support Examiner's finding of inherency. This is because Tsai, at x = 12.5 of figure 2b, temperature distribution does not have a center that is cooler than outer portions, and because Tsai only speaks to the flame temperature, NOT the surface temperature. Examiner's agrees with Applicant's discussion regarding Tsai, nevertheless the arguments are not persuasive.

The fact that a flame has an even temperature at 12.5 cm, is largely irrelevant because it has the required temperature distribution at other locations, Namely where x equals 2.8 and 7.6. The rejection is not based any finding that there is the temperature distribution at "all" locations, rather that there is the temperature distribution at (some) locations. The rejection sets forth that it would have been obvious to perform routine experimentation to determine the optimal burner placement; it appears that this is undisputed.

As to the flame temperature vs. surface temperature: this is not convincing. One would understand and expect that the locations where hot portions of the flame impinge would be hotter than locations where cooler portions of the flame impinge. To put it another way: The Office has made a reasonable showing that routine experimentation would yield the claimed invention, and that applicant merely recognized the inherent property.

Applicant also relies on Sudo to show what the typical surface temperature distribution would be, And that it does not show the claimed temperature profile. Examiner disagrees. The left hand portion of figure 7 of SUDO shows the maximum temperature, as well as the gradual temperature decrease to 300 (as described by

applicant). However, it also shows a less-gradual decrease in temperature. The 650 C peak has two sides - one sharp one gradual. The sharp gradient shows what applicant has found in their invention, and what is predicted by Tsai.

It is also argued that Moltzan does not teaching ports feeding only a combustion - assisting gas, and not a combustion gas. This is not very relevant. The claims do not require steps of feeding any particular gas, thus Moltzan does not have to teach such to support a determination of anticipation or obviousness. Moltzan only need be sufficiently sufficient "for feeding" the gases as claimed. Applicant if free to narrow the claims to explicitly require steps of feeding specific gases through specific features.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann
Primary Examiner
Art Unit 1791

jmh

/John Hoffmann/
Primary Examiner, Art Unit 1791